

EARNINGS QUALITY FACTORS AND FIRM'S VALUE IN INDONESIAN MANUFACTURING DURING COVID-19

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Abstract

This study aims to test the relevance of financial ratios and other factors as determinants of earnings quality and their impact on firm value in the manufacturing industry sector during the Covid-19 pandemic period. The various financial ratios tested are liquidity, activity and solvency, while other factors include intellectual capital, and audit quality. This type of research uses a quantitative approach and uses a cross-section data panel of sixty-seven companies and a three-year time series of the Covid-19 period. The analysis of the research data uses a fixed effect model from the results of the Chow and Hausman test. The results of this study are in addition to the results of hypotheses 6, 9 and 10 are accepting the alternative hypothesis and finding that the various financial ratios tested along with other factors have a determinant relevance to earnings quality in manufacturing companies listed on the IDX. However, these results did not occur in relation to firm value.

Keywords: Earnings Quality, Firm's Value, Financial Ratio's, Conditional Revenue Model.

INTRODUCTION

Various definitions of earnings quality from the perspective of decision usefulness in accounting and management research literature, [1] which cohorts measurements and ways to determine the quality of profits using the time series approach of profits, the cash-accrual profit relationship, qualitative characteristics in the conceptual framework and implementation decisions. Furthermore, according to [2], the worth relevance approach as a measure of the profit use oncoming and its direct benefits to investors which explains the 'return' variable. In the otherside, stakeholders' of financial reporting, the firm's profit level which is focused on or uses the bottom-line such as net profit in financial information can be perceived as the success or managerial performance achievement in managing the company which is one of the indicators for quantifying firm's performance from the financial aspect. If the desired profit at a certain level is not achieved then there is an opportunity for opportunistic action for a manager to take action in implementing legal profit management practices using a set or gap in accounting policies.

The relevance of measuring earnings quality will of course have an impact on measurements that use 'accrual' policies, several changes to Statement of Financial Accounting Standards (SFAC) have an impact on increasingly limited accrual policies, one of which is regarding comprehensive profit and loss reporting which was implemented starting January 1 2012. Academics are also trying to measure the relevance of quality proxies profit with a certain

approach, which states the weaknesses of previous research earnings quality measurement models, such as [3] who recommends measurement with the revenue model and conditional revenue model approaches, which states the weaknesses of the accrual model, where cross-sectional approximations which circumstantial assumes that firms in the one type industry present the similar accrual process. The focus of measurement uses the main component of income, namely receivables, to predict earnings management.

Empirically testing the antecedents of earnings quality, the credibility of profit information has often occurred in many cases since the 21st century, causing a decline in investor confidence in earnings quality. Company management has many opportunities to choose company policies and provisions to promote company values. On the other hand, internal and external parties from good corporate governance will of course look at the quality of reported profits. Based on the release of a survey from Association of Certified Fraud Examiners (ACFE), quoted by ACFE Indonesia in the Nations Report in 2018, where 10 percent of statement reports for the period get about fraudulent, where 239 cases were identified in Indonesia, with statement reports fraud amounting to 6.7 percent or 16 cases, 93 respondents or 38.9 percent of them specified that the financial media made the largest disclose fraudulent of situation report of World Health Organization [4, 5]. The occurrence of cases of irregularities as in the release above shows that the profits presented by companies in a financial report are not always declared 'quality' or have 'low relevance'. Low earnings quality will conduct financiers hesitate to invest their capital in the venture so that the firm's funding decreases, which can then have an impact on business activities or business continuity in the company. Looking at this data, what is the condition of earnings quality in the Covid-19 pandemic era.

Starting from findings in the Hubei – China, Wuhan city at the end of 2019, there was an epidemic of pneumonia cases of strange etiology. The release of the WHO report stated that there were 9,720 confirmed cases, 1,5238 suspected cases, 1,527 serious cases, and 213 deaths, where WHO took strategic steps to overcome the transmission of the Covid-19 pandemic by reducing transmission through close contact, especially with health workers and preventing transmission to other countries [6]. At the end of 2020, with the implementation of the Indonesian large-scale social restrictions (PSBB, abbreviated) policy in Indonesia nation. KSEI Corp., viz. Kustodian Sentral Efek Indonesia, which also reported its statistical data in January 2021, noticed a significant increase capital market investors amount with an achievement of 3,880,753 compared to the end in 2018 and 2019, this represents that business in the capital market is prefers the public than real business which is currently in decline during the Covid-19 pandemic [7]. Furthermore, the fabrication industry has export value significant raising, from January to November 2021 attained USD 160 billion or put up 76.51 percent of overall domestic in a export activity. The performance of export activity in fabrication industry since January until November in 2021 escalated as 35.36 percent, when compared to January-November 2020, and also can simultaneously maintain the trade balance surplus recorded since May 2020 [8]. Based on the phenomenon above, business in the capital market has become more of a choice for the public during the pandemic due to the Government Regulation that enforces the 'Pembatasan Sosial Berskala Besar' abbreviated by PSBB. Then, it becomes important to identify the relevance of earnings quality and the capital market aspect that

describes the firm's value achievements in the Covid-19 pandemic era. Firm's value has eternally been recognized as the highly necessary to academics in reviewing past and research ini prospective. Almost all academic research in management and accounting agrees to place this construct as a factor influenced by or receiving implications from its predictive factors. This research purposes to verify the relevance of the factors determining earnings quality and their impact on firm's value in the manufacturing sectors throughout the Covid-19 pandemic. The factors tested are financial ratio's, intellectual capital and audit quality. This research is only limited to the reporting year during the Covid-19 period, i.e., period of 2019-2021.

LITERATURE REVIEW

Earnings Quality

Earnings quality is a matter that is getting more concern several decade and is a matter of contention by regulators and investors and surrounding accounting of academics. Defining aloft earnings quality as one that more honestly (faithfully) represents the features of the process a company's basic earnings are involved for a particular decision formulated by the decision maker [9]. According to [10], adding several methods used to measure earnings quality, i.e.,

Accrual Persistence

Earnings quality based on relative differences accrual persistence on cash flows. Persistence is measured using regression as follows:

$$OI_{i,t+1} = \alpha + \beta_1 CF_{i,t} + \beta_2 ACCR_{i,t} + \varepsilon_{i,t} \quad (1)$$

where operating income (abbr. 'OI') subsequent to deducting depreciation, operating cash flow (abbr. 'CF') calculated from the different OI between accrual component of earnings (abb. 'ACCR'). ACCR is calculated from changes in net operating assets (abbr. 'NOA') in year t-1 to t. The company name is indicated by i and t indicates the year. All variables are standardized by NOA_{t-1} and the additional contribution of accruals is determined by the significance of β_2 .

Accrual Estimation Errors

Accruals give information pertaining to future cash flows (abbr. 'FCF'), this aims to ensure that the accrual process is loose from estimation errors. Accruals and profits will be represented by FCF. According to [11], stated for measuring of Accrual which adopted by [12, 13] was modified can calculate the residual variance model follows:

$$TCA_{i,t} = \beta_0 + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t} + \beta_3 CFO_{i,t-1} + \beta_4 \Delta Rev_{i,t} + \beta_5 \Delta PPE_{i,t} \varepsilon_{i,t} \quad (2)$$

where total current accrual (abbr. 'TCA'), cash flows from operation (abbr. 'CFO'). Total accruals are similar to differ a current amount accruals with depreciation and also amortization (expenses). ΔRev is the differentiation in income of year t-1 with t. Property, Plant, and Equipment (abbr. 'PPE') is the scale among PPE (based of gross PPE). Overall variables are regressed and computed by the usually total assets in year t.

Absence of Earnings Management

Identify earnings management using expected accruals or non-discretionary accruals. Several mathematical approaches in measuring earnings management models [14, pp. 217-228] among others:

- 1) Healy Model; The first measurement of earnings management was carried out in 1985. Healy calculated the total accrual value (TAC) by reducing the accounting profit obtained during a definitely period from the operating cash flow of the period concerned. The *Healy Model* is formulated as follows:

$$TAC = Net\ Income - Cash\ flows\ from\ operation \quad (3)$$

$$NDA_t = \frac{\sum TAC_t}{T} \quad (4)$$

- 2) De Angelo Models; earnings management measurement developed in 1986. Meanwhile, this model measures earnings management with non-discretionary accruals. *De Angelo Models* is formulated as follows:

$$NDA_t = TAC_{t-1} \quad (5)$$

- 3) Jones Models; earnings management measurement developed in 1991. This model uses two assumptions as the basis for development, i.e.,: (i) accruals for the current period, namely differencing in the working capital account, which are the yield of differencings that occur in the company's economic environment which are related to changes in sales, so that entire variables divided among assets or sales of the precede period; and (ii) gross PPE is one of the substantial constituents used to calculate total accruals, especially for non-discretionary depreciation expenses. The Jones Models is formulated below:

$$NDA_t = \alpha_1 * \left[\frac{1}{A_{t-1}} \right] + \alpha_2 * \left[\frac{\Delta REV_t}{TA_{t-1}} \right] + \alpha_3 * \left[\frac{PPE_t}{TA_{t-1}} \right] \varepsilon \quad (6)$$

- 4) Jones Model (*Modified*); earnings management measurement developed in 1995. This model is modified by using total accruals and a regression model to calculate expected accruals and unexpected accruals. Discretionary accruals model used as proxy for measure of earnings management. This model has the obtain of breaking down total accruals to specific four major accrual components, viz. discretionary with current and long-term accruals, which are accruals become a cause on current assets and long-term accrual based from non-current assets (fixed assets). *The Jones Modified Model* is formulated below:

$$\frac{TAC_t}{TA_{t-1}} = \alpha_1 * \left[\frac{1}{TA_{t-1}} \right] + \alpha_2 * \left[\frac{\Delta REV_t}{TA_{t-1}} \right] + \alpha_3 * \left[\frac{PPE_t}{TA_{t-1}} + v_t \right] \varepsilon \quad (7)$$

Phillips Model; earnings management measurement developed in 2003 using a profit allocating approach. This approach recognizing earnings reporting limits (earnings thresholds) come across that firms that are beneath earnings thresholds will attempt use earnings management practice to transcend these limits..

According to [15] classified two types of earnings thresholds, viz: (i) zero-profit reporting point, which represents earnings management ways to evade statements losses; and (ii) the profit change point is 0 (zero), which represents earnings management ways to evade a decrease in profits. *The Phillip's Model* is formulated as follows:

$$\Delta E = \frac{E_{it} - E_{it-1}}{MVE_{t-1}} \quad (8)$$

Discretionary Revenue Model; earnings management measurement developed by [3]. This model has two formulas for measuring profit management, i.e., the revenue model and the conditional revenue model. The revenue model concentrate on income that has a lineal with receivables, while the conditional revenue model is redeveloped by adding company size, company age and gross margin. The *Revenue Model* is formulated as follows:

$$\Delta AR_{it} = \alpha + \beta_1 \Delta R_{1-3it} + \beta_2 \Delta R_{4it} + e \quad (9)$$

Explanation:

ΔAR : end of year of receivables

ΔR_{1-3} : revenue of first until third quarters

ΔR_4 : revenue in fourth quarter

e : error

The *Conditional Revenue Model* is formulated as follows:

$$\Delta AR_{it} = \alpha + \beta_1 \Delta R_{it} + \beta_2 \Delta R_{it} + SIZE_{it} + \beta_3 \Delta R_{it} + AGE_{it} + \beta_4 \Delta R_{it} + AGE_SQ_{it} + \beta_5 \Delta R_{it} + GRR_P_{it} + \beta_6 \Delta R_{it} + GRR_N_{it} + \beta_7 \Delta R_{it} + GRM_{it} + \beta_8 \Delta R_{it} + GRM_SQ_{it} + \varepsilon_{it} \quad (10)$$

Explanation:

ΔAR : accrued receivables

Δ : annual change

R : annual revenue

SIZE : logaritma natural of total assets at the end of the year

AGE : logaritma natural of company age

GRR_P or_N : industry median *adj.* revenue growth (P=0 if negative, or N=0 if positive)

GRM_SQ : industry median *adj.* gross margin at the end of fiscal year

GRM_SQ : square of variables

Firm's Value

Based to the [16, p. 18], is defines firm's value as the present value of future free cash flow at a discount rate appropriate to the weighted average cost of capital.

Firm's value can be measured with several compute below:

- 1) *Price-to Earnings Ratio* (PER); is a comparison among a stock price divide with earnings per share. PER is a function of changes in expected profit ability in the future. The greater the PER, the greater the possibility for the company to grow so that it can increase the value of the company. PER can be measured with market value per share divide by EPS (market price per share) [17, p. 138].
- 2) *Price-to Book Value* (PBV). Measuring this ratio is very essential investors to formulate portfolio concepts in market capital. PBV can be measured with the current stock price against the book value per share [16].
- 3) *Market-to Book Value* (MBR). This ratio measurement is a describe of investors' view point or esteem of the firm book value by share prices. Market-to book value obtained from the balance sheet gives information pertaining to resources firm's net value. The larger the market-to book value, the investors will good assesstment about book value [18, p. 70].
- 4) Tobin's Q. This alternative ratio measurement by professor James Tobin for quantify firm's value. This ratio is a very valuable concept because it represents the financial market's current estimate of add the return value of each dollar in investment. Tobin's Q proxy is calculated the MV-Equity and total debt divided by total assets [19]. This ratio was developed to serve the best information regarding phenomena in frequent activities such as the relationship among management share ownership and firm's value.

Empirical Review

Financial Ratio's and Earnings Quality

Several findings show that financial ratio's use the impact of asset use efficiency consisting of working capital turnover, asset growth rate, and current asset turnover rate is an important determinant of earnings quality with accounting earnings with ROA proxy in the last five years, i.e., 68 manufacturing firm's on the Amman Stock Exchange (ASE) by [20] during 2009-2015, the results conclude that the relevance of earnings quality can increase statistically significantly due to the efficient use of assets (working capital turnover, asset growth rate, and current asset turnover rate).

Research by [21] which uses a quality of income calculation for its relevance based on the influence of company size, capital structure, liquidity, investment opportunity set (IOS), and profitability involving 7 manufacturing firm's, food and beverage sub-sector companies listed on the Indonesia Stock Exchange in 2013-2017. The results conclude that the relevance of earnings quality is only significantly and positively influenced by liquidity measured by the current ratio.

Research by [22] which uses non-discretionary accruals, modified Jones model approach for its relevance based on the influence of capital structure, firm size, growth prospects, audit quality, and liquidity involving 15 coal mining firm's sub-sector listed on the Indonesia Stock Exchange in 2012-2016. The research results conclude that the relevance of earnings quality is

no a significant impact on liquidity as measured by the current ratio. Therefore, there is still a gap in prior research findings and the first alternative hypothesis is formulated:

H₁: There is relevance of liquidity to the earnings quality

Several findings show that financial ratio's use the inventory turnover analysis as a performance dimension in the manufacturing process to the earnings in the last five years, i.e., 420 manufacturing firm's registered at the Korea Exchange (KRX) by [23] during 2010-2018, the results conclude that the relevance of earnings quality can reduce earnings quality by controlling the company's inventory accrual level. Research by [24] with uses total accruals with calculation non-discretionary on modified Jones model 1991 for its relevance based on the effort of profitability, growth, leverage, operation cycle, and prudence involving 58 manufacturing firm's, listing at IDX 2014-2018 period. The results concluded that the relevance of earnings quality is not proven by calculating receivable turnover in the company cycle using non-discretionary approaches.

Research by [25] which uses aggressive of conservative accounting policies in estimates of provisions, contingent liabilities, revenue recognition, bad debts and inventory valuation, the elucidating discretionary accounting choices and statements financial quality involving 248 firm-year state commercial firms in Kenya during 2004-2015. The results concluded that the relevance of discretionary accounting choices in depreciation methods and inventory costing has an insignificant effect on the linkage among top management team demographic diversity and quality of reporting. Therefore, there is still a gap in prior research findings and the second alternative hypothesis is formulated:

H₂: There is relevance of activity to the earnings quality

Several findings show that financial ratio's use the debt ratio analysis, debt can be used in accounting policies that can reduce financing and also motivate company managers to default on work contracts through managing profit information [26]. Research by [27] with uses discretionary accruals with modified Jones model for its relevance based on leverage with debt ratio proxy and profitability involving 30 manufacturing firm's at Amman Stock Exchange (ASE) in 2011-2015. The results concluded that the relevance of earnings quality can increase statistically significantly due to debt ratio and profitability.

Research by [28] with uses income smoothing with excel index 1981 for its relevance based on the cash-flow volatility and leverage involving 139 non-financial firm's, listing at IDX 2013-2017 period. The results concluded that the relevance of earnings quality is significantly and negatively influenced by leverage by the DER proxy. Research by Rusdiah Hasanuddin [29] with uses quality of income ratio for its relevance based on firm size, current ratio, debt, and investment opportunity set (IoS) involving 17 manufacturing of food and beverage sub-sector listing at IDX 2016-2019 period. The results concluded that the relevance of earnings quality is not proven by calculating leverage ratio using debt proxy. Therefore, there is still a gap in prior research findings and the third alternative hypothesis is formulated:

H₃: There is relevance of solvency to the earnings quality

Intellectual Capital and Earnings Quality

Several findings show that intellectual capital use the human capital (HC), relationship capital (RC), and structured capital (SC) efficiency is an necessary determinant of earnings quality with discretionary accruals in the last ten years, i.e., 100 Malaysian firm's over the period 2000-2011 by Payam Mojtahedi [30]. The results concluded that the relevance of earnings quality is not proven by components of SCE, but HC and RC efficiency are significant. Research by [31] uses the capital efficiency is an important determinant of earnings quality with discretionary accruals involving 6 banking firm's in the Palestine Exchange (PEX) during 2009-2017.

The results concluded that the relevance of earnings quality is not proven by calculating components of intellectual capital. Research by [32] with uses earnings quality with discretionary accruals for its relevance based on the intellectual capital, corporate governance, and audit quality involving 14 transportation firm's sub-sectors, listing at IDX 2014-2018 period. The results concluded that the relevance of earnings quality is significantly and positively influenced by Intellectual capital can be a trigger indicator earnings management practice. Therefore, there is still a gap in prior research findings and the fourth alternative hypothesis is formulated:

H4: There is relevance of intellectual capital to the earnings quality

Audit Quality and Earnings Quality

Several findings show that audit quality use the audit fees measures, which the linkage among these is whether abnormally low audit fees will be related with a higher propensity for earnings management in the context of accrual quality with ROA proxy element in the last five years, i.e., 300 highly sampel in BM&FBovespa, São Paulo over the period 2009-2010 by [33]. The results concluded that the relevance of earnings quality is proven that low audit fees can have an impact on high earnings management using an accrual quality approach. Research by [34] use the categorization of Big 4 and non-Big 4, which growth rate higher annual sales and profitability as well as lower debt composition in the context of discretionary accruals, i.e., 4,723 data observed from SABI (Iberian Balance Sheet Analysis System) over the period 2013-2015.

The results concluded that the relevance of earnings quality is proven that the level of earnings management is significantly lower among firms that contract Big 4 audit offices. Research by [35] uses the use the categorization of Big 4 and non-Big 4, which managerial entrenchment, audit quality coupled with leverage, firm size, and profitability in the context of discretionary accruals i.e., 74 manufacturing firm's listing at IDX 2016-2018 period. The results concluded that the relevance of earnings quality is proven that increase audit quality can improve negatively and significant. Therefore, there is still a gap in prior research findings and the fifth alternative hypothesis is formulated:

H5: There is relevance of audit quality to the earnings quality

Financial Ratio's and Firm's Value

Several findings show that financial ratio's use the liquidity with internal measurements to the firm's value (BEP, ROA, GPM, and NPM) as well as external measurements 'Tobin's Q' proxy there's been quite a lot, while use the net working capital still few have researched it, such as 132 textile firm's in the in the Pakistani Stock Exchange (PSX) by [36] during 2008-2015, the results conclude that the relevance of firm's performance can increase statistically significantly due to the networking capital, and also the liquidity with current ratio is prove the relevance value about ROA and ROE to measure firm's performance from Research by [37] involving 20 insurance firm's in UK enterprises during the period from 2000 to 2018.

About the financial ratio's use the activity with inventory measurements to to the firm's value, such as [23] research use the adjustment inventory and using performance comparison with Altman's Z Score approach involving 420 manufacturing firm's registered at the Korea Exchange (KRX). The result inferred that adjusted inventory turnover (AIR) can be an indicator of good firm's performance in terms of financial sustainability. But research findings from [37] inferred that the asset turnover have a negative relevance to the UK insurance companies performance. Therefore, there is still a gap in prior research findings and the next alternative hypothesis is formulated:

H₆: There is relevance of liquidity to the firm's value

H₇: There is relevance of activity to the firm's value

About the financial ratio's use the solvability with debt ratio to to the firm's value, such as [38] studies in involving 542 sample without financial sector firm's registered at the Malaysian Stock Exchange (MSE) during 2009-2012. The result inferred that the relevance of firm's performance has prove of debt to total assets has a negative relevance on company performance and is not significant, while in reseach by [39] has a positive impact on Tobin's Q acquisition and significantly represents one of the dimensions of firm's value. Therefore, there is still a gap in prior research findings and the eighth alternative hypothesis is formulated:

H₈: There is relevance of solvency to the firm's value

Intellectual Capital and Firm's Value

Several findings show that intellectual capital use the VAICTM provides preliminary evidence that this proxy is related to corporate financial profitability in the last ten years, i.e., restricted of 150 firm's registered at Singapore Exchange between the years of 2000-2002 by [40], then the research findings from [41] covered 45 reports from IIRC website during 2016 and 2017 period. The results that intellectual capital disclosure (ICD) with low quality in integrated reports yields to firm's performance i.e., ROE.

However, research by [42] with uses *value-added capital employed* (VACA, one of component approach of intellectual capital) involving 13 manufacturing firm's at sub-sectors of automotive and component registered in the IDX during of 2010-2019, is proven that relevance firm's performance not supported by the VACA approach in the intellectual capital component. Therefore, there is still a gap in prior research findings and the ninth alternative hypothesis is

formulated:

H₉: There is relevance of intellectual capital to the firm's value

Audit Quality and Firm's Value

Several findings show that audit quality use the audit fees measures, [38] studies inferred that the relevance of firm's performance has prove of the LNFE in calculate audit quality has a positive influence toward Tobin's Q. Research by [43] uses audit fees based on the number of sales and considerations based on the auditor's experience as other audit quality measurements involving 147 manufacturing firm's in the Pakistani Stock Exchange (PSX) during 2008-2017. The research findings inferred that the relevance of firm's performance with ROA and sustainable growth rate proxies is significantly influenced by audit quality measured by audit fee. However, research by [44] with uses the categorization of Big 4 and non-Big 4 involving 46 financial and non-financial firm's on the Amman Stock Exchange in 2016, is proven that relevance firm's performance not supported by the financial industry has no significant positive impact toward Tobin's Q. Therefore, there is still a gap in prior research findings and the tenth alternative hypothesis is formulated:

H₁₀: There is relevance of audit quality to the firm's value

Earnings Quality and Firm's Value

Several findings show that earnings quality use the earnings accruals to measure, [45] studies with involving manufacturing firm's in Srilangka on the Colombo Stock Exchange (CSE) since 2010-2015. The research inferred that the relevance of firm's performance has prove that there is no significant positive implication to stock returns of earnings quality measurement. Research by [46] uses aspects of earnings persistence, earnings management, and timeliness of profitability involving 3,910 data observations on the Vietnam Stock Exchange in 2010-2018 period. The research findings inferred that the relevance of firm's performance with Tobin's Q and Price proxy is significantly and positive influenced earnings quality uses three aspects of earnings quality. Therefore, there is still a gap in prior research findings and the eleventh alternative hypothesis is formulated:

H₁₁: There is relevance of earnings quality to the firm's value

RESEARCH METHOD

The research method is ex post factor, namely a type of research on data collected after the occurrence of facts and events which are classified into causal comparative research. According to [47, p. 124], the type research define a variable, instrument or inter-model research according to a quantitative approach, a plan that entangles determining what happened as far as certain factors are apprehen. The study population consists of companies in the manufacturing industry registered at Indonesia Stock Exchange (IDX), by amount of manufacturing firm's data observed was 201 in 2021 years. The observation used in financial reporting in 2019-2021, which is contained Covid-19 pandemic era. Data collection methods with literature and study documentation techniques from secondary data attained through firm's of official annual report,

and website IDX: www.idx.co.id. The purposive sampling technique with fulfill: (1) manufacturing industry firm's that have published annual reports during the 2019-2021 Covid-19 pandemic period consistently report with positive earnings, and (2) companies that have complete annual and financial report data (audit fee data, and data that supports the research object). About these criterion, the final sample to the tune of sixty-seven firms. The measurement of variables overall using a ratio scale is every exegesis calculated below:

Table 1: Operational Variable Measuring

Variable Name	Dimension	Symbol Abb.	Exegesis	
			Proxy	Sign
Financial Ratio's	Liquidity	LIQ	$\frac{\text{Current Assets} - \text{Current Liabilities}}{\text{Total Assets}} \times 100\%$	+
	Activity	ACT	$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$	+
	Solvability	SOLV	$\frac{\text{Total Debt}}{\text{Total Assets}}$	+
Intellectual Capital	Value-Added Capital Employed	VACA	$\frac{\text{Value Added}}{\text{Capital Employed}}$ <i>Value Added = OP + EC + D + A</i>	+
Audit Quality	Audit Fee	LNFE	<i>Log Naturals of Audit Fee</i>	+
Earnings Quality	Conditional Revenue Model	ARit	$\Delta AR_{it} = \alpha + \beta_1 \Delta R_{it} + \beta_2 \Delta R_{it} + \text{SIZE}_{it} + \beta_3 \Delta R_{it} + \text{AGE}_{it} + \beta_4 \Delta R_{it} + \text{AGE}_{SQ_{it}} + \beta_5 \Delta R_{it} + \text{GRR}_{P_{it}} + \beta_6 \Delta R_{it} + \text{GRR}_{N_{it}} + \beta_7 \Delta R_{it} + \text{GRM}_{it} + \beta_8 \Delta R_{it} + \text{GRM}_{SQ_{it}} + \varepsilon_{it}$	-
Firm's Value	Tobin's Q	TQ	$\frac{\text{Market Price of Outstanding Shares} + \text{Debt}}{\text{Total Assets}}$	+

Source: Based on the foregoing study (2023)

In this research, model specification initially from descriptive statistical, panel data analysis estimation into the model selection, and verify of hypothesis appropriate models. This research was analysed using quantitative calculations using the *Paired Test Theory* for determining estimation models method.

These regression equations are calculated below:

$$ARit: \beta_0 \alpha + \beta_1 LIQ + \beta_2 ACT + \beta_3 SOLV + \beta_4 VACA + \beta_5 LNFE + e \quad (11)$$

$$TQ: \beta_0 \alpha + \beta_1 LIQ + \beta_2 ACT + \beta_3 SOLV + \beta_4 VACA + \beta_5 LNFE + \beta_6 ARit + e \quad (12)$$

Each of the coefficients of the independent variables formed equation regression yields [48, p. 46]. This method probes the panel data analysis technique. For comprehend data panel analysis

will able to substantially reduce the omitted-variables problem by accommodating information related to these variables [49, p. 637]. The foundation for decision-making in panel data regression analysis after determining the estimation model's selection is simultaneous testing (F test) and individual parameter testing (t-test).

RESULTS AND DISCUSSION

Results

The summary of descriptive statistics from output programs can notice table below:

Table 2: Descriptive Statistics Summary

	LIQ	ACT	SOLV	VACA	LNFE	ARit	TQ
Minimum	-0.251878	0.000000	0.003453	-5.121430	7.716003	-76.83768	0.283797
Maximum	0.994608	1003.855	0.826739	4.631218	10.96848	112.2443	16.26333
Mean	0.285433	11.42516	0.380858	0.631853	9.010455	1.332283	1.938100
Std. Dev.	0.229343	71.48072	0.181096	0.904719	0.597235	13.36340	2.204011
Jarque-Bera	12.92027	289042.8	4.855164	1538.849	15.15394	8129.033	2598.351
Probability	0.001565	0.000000	0.088250	0.000000	0.000512	0.000000	0.000000
Observations	201	201	201	201	201	201	201

Source: *Calculated from statistical programs (2023)*

Table 2 sums up of descriptive summary, containing among minimum and maximum counts, χ -counts, and standard deviation counts; until jarque-bera and probability score for testing normality assumptions with a sample of 201 observations. Besides, the earnings quality (ARit) is elaborated with 1.332283 scoring of accrual receivables, meaning reported that the average accrual of receivables was in an index that still indicated the existence of earnings management practices while the minimum and maximum scores (ARit) is have very significant differs among minus 76.83768 until 112.2443. The average scoring when compared with the value obtained from the standard deviation has very small variations (less than 30 percent).

The minimum and maximum score of financial ratio's i.e., liquidity (LIQ), activity (ACT), and solvability (SOLV) have very significant differs scoring, which Liquidity between minus 0.25178 and 0.994608 counts, Activity between 0.000000 and 1003.855 counts, Solvability between 0.003453 and 0.826739 counts. The minimum and maximum intellectual capital (VACA) score between minus 5,121430 and 4.631218, audit quality (LNFE) elaborated with 9.010455 scoring of log naturals of audit fee.

Overallly, a mean score of liquidity, activity, solvability, intellectual capital, and audit quality have the kurang dari lebih dari skor 1 dari standar deviasi, it means have very large variations. Meanwhile, the firm's value (TQ) is elaborated with 1.938100 scoring of tobin's Q, meaning reported that the index of the linkage among management share ownership and company value. The minimum and maximum scores is have very significant differs among 0.283797 until 16.26333 counts. The average scoring when compared with the value obtained from the standard deviation has very quite large variations (more than 30 percent).

Table 3: Panel Data Analysis Estimation

Estimation Methods	Testing Criteria	Earned Value / Conclusion	
		Yields of Equation (1)	Yields of Equation (2)
Chow-Test	Common-effect (OLS) with Fixed-effect (GLS)	F and <i>probability cross section</i> less than 0,05 score, i.e., 3.088186 and 0.0000, inferred as “Fixed effect”	F and <i>probability cross section</i> less than 0,05 score, i.e., 47.390052 and 0.0000, inferred as “Fixed effect”
Hausman’s-Test	Fixed-effect with Random-effect (EGLS)	Chi-sq <i>statistics</i> and <i>probability</i> less than 0,05, i.e., 64.226276 and 0.0000, inferred as “Fixed effect”	Chi-sq <i>statistics</i> and <i>probability</i> less than 0,05, i.e., 12.918192 and 0.0444, inferred as “Fixed effect”
Lagrange Multiplier Test	Common-Effect with Random-Effect	*)	*)

*) no testing was verified because the estimation yields in equation 1 and 2, choose a Fixed-Effect model

Source: *calculate from statistical programs (2023)*

Table 3 sums up of panel data analysis estimation from output programs on *Chow-test*, the two proposed regression equation models proceed respective F cross section score of 3.088186 and 47.390052 with a cross section probability of less than 0.05, viz each of 0,0000. This means inferred that the two regression models specified are Fixed-Effect. Hereinafter, panel data analysis estimation from output programs on *Hausman-test*, the two proposed regression equation models proceed respective chi-sq statistics score of 64.226276 and 12.918192 with a chi-sq probability of less than 0.05, viz 0,0000 and 0.0444. This means inferred that the two regression models specified are Fixed-Effect. Because of, the Lagrange Multiplier test was not verified in this estimation. The proceed by data panel analysis sever to Fixed-Effect model (t-Test) and simultaneous (F-Test) as simultaneousy; gauged method of Pooled EGLS (cross-section weights) as follows:

Table 4: Pooled EGLS Methods (*cross-section weights*)

'Signs' of Path	Coefficients Score	Earned Value / Conclusion		
		t-Stats	sig. probability	Conclusion of Hypothesis Test
LIQ → ARit	4.919360	3.110616	0.0023	Accept H ₁
LIQ → TQ	0.154970	0.824841	0.4110	Reject H ₆
ACT → ARit	0.195987	6.994390	0.0000	Accept H ₂
ACT → TQ	-0.000449	-5.515664	0.0000	Accept H ₇
SOLV → ARit	15.75650	19.84380	0.0000	Accept H ₃
SOLV → TQ	-0.704197	-4.727539	0.0000	Accept H ₈
VACA → ARit	1.019467	7.104154	0.0000	Accept H ₄
VACA → TQ	0.042159	1.695476	0.0924	Reject H ₉
LNFE → ARit	4.991212	2.360309	0.0198	Accept H ₅
LNFE → TQ	0.049646	0.964961	0.3364	Reject H ₁₀
ARit → TQ	0.001598	5.809786	0.0000	Accept H ₁₁

Source: *Calculated from statistical programs (2023)*

Table 4 describes the evidence for the proposed alternative hypotheses, where eight of the eleven is stated 'Accept', this is inferred that discovered relevance of financial ratio's i.e., liquidity, activity, and solvability, then intellectual capital and audit quality factor to the firm's value. While, one is no relevance of financial ratios i.e., liquidity, then intellectual capital and audit quality factor to the firm's value, then is the relevance of earnings quality to the firm's value.

Table 5: Fixed-Effect (*Goodness of Fit Model*)

<i>Goodness of Fit</i>	<i>Relevance of Earnings Quality</i>	<i>Relevance of Firm's Value</i>
<i>Adjusted R² - Score</i>	0.534197 (sufficient influence)	0.962329 (very strong influence)
<i>Probability (F-Stats)</i>	0.0000 (significant)	0.0000 (significant)

Source: *Calculated from statistical programs (2023)*

Table 5 states that the *goodness-of-fit* to foresee model result in an *Adj. R²* score is 0.534197 is sufficient to interpret relevance of earnings quality, this indicates that the 53.4197 percent of relevance of earnings quality factors to influence the financial ratio's aspect of liquidity, activity solvability, then intellectual capital and audit quality, the remaining of 46.5803 percent is affect of a dissimilar variable not inserted into proposed study. Based to the compendium of *R²* tests, these models explain relevance of earnings quality is very good. An *Adj. R²* score is 0.962329 is very strong to interpret relevance of firm's value, this indicates that the 96.2329 percent of relevance of firm's value to influence the financial ratio's aspect of liquidity, activity solvability, then intellectual capital, audit quality, the remaining of 3.7671 percent is affect of a distinct relevancy of variable not inserted into proposed study. Based to the compendium of *R²* tests, these models explain relevance of firm's value is good.

Discussions

The yields of panel data regression for portending Earnings Quality relevance (from Table 4), empirical evidence represents that overall from Financial Ratio's consists of Liquidity, Activity, and Solvability, then the Intellectual Capital (valued-added capital employed: proxy) and audit quality (LNFE proxy) have relevance to the accrual receivables of elements to quantify 'Earnings Quality'. Statistical score have generates a probability extent of less than 0.05 viz. 0.023, 0.0000, 0.0000, 0.0000 and 0.0198 (H_1, H_2, H_3, H_4, H_5 , is 'Accept') and as significantly. The variable that has relevance is Solvability, with a regression coefficient of 15.75650, while the variable that has the least influence is Activity in testing Earnings Quality at manufacturing industries registered at Indonesia Stock Exchange (IDX) in the reporting period of Covid-19. Findings in proving the first hypothesis is support the prior study stated that the asset use efficiency is an essential determinant of earnings quality research by [20] with earnings persistence, then by [21] with current ratio proxy prove the relevance of liquidity is significant yields to the quality of income, but insignificant when liquidity used to verify the earnings quality with non-discretionary of the modified Jones 1991 model calculate.

The financial ratio's use the inventory turnover analysis to measure of activity in this study prove the second hypothesis proposed, which probe is support the prior study by [23] is stated that the company's inventory accrual level is very relevantly controlled in reporting of earnings

quality, then activity ratio with operation cycle has relevance based to measure total accruals with calculation non-discretionary on modified Jones model 1991 [24], but [25] which uses aggressive of conservative accounting is no relevance based to increasing reporting quality. The financial ratio's use the debt ratio to measure of solvability in this study prove the third hypothesis proposed, which probe is support the prior study that the debt ratio is an important determinant of earnings quality research by [27] with uses disrecretionary accruals with modified Jones model, then leverage with debt-to equity ratio has relevance based to measure income smoothing with excel index [28], but [29] which uses quality of income ratio is no relevance based to measure of earnings quality.

The intellectual capital with VACA components in this study prove the fourth hypothesis proposed, which probe is support the prior study by [31] is stated that the capital efficiency is an important determinant of earnings quality, then research by [32] etc. is stated that the intellectual capital can be a trigger indicator earnings management practice. Both of them, uses with disrecretionary accruals proxy. However, in [30] research is no relevance based from human capital (HC) of SCE to the earnings quality with disrecretionary accruals. The audit quality use the LNFE proxy in this study prove the fifth hypothesis proposed, which probe is support the prior study by [33] is stated that the low audit fees can have an impact on earnings quality, then research by [34, 35]; use the the categorization of Big 4 and non-Big 4, which the findings that the relevance of earnings quality is proven that audit quality can the earnings management level is significantly to lower among manufacturing firms.

The yields of panel data regression for portending Firm's Value relevance (from Table 4), empirical evidence represents that Financial Ratio's consists of Activity and Solvability, then the earnings quality (accrual receivables) have relevance to the Tobin's Q of scoring to quantify 'Firm's Value'. However, the financial ratio's consists of Liquidity then the earnings quality (accrual receivables proxy) has no relevance to the Tobin's Q of scoring to quantify 'Firm's Value'. Statistical score have generates a probability extent of less than 0.05 viz. 0.0000 of them (H₇, H₈, H₁₁, is 'Accept') and as significantly. The variable that has relevance is Liquidity, with a regression coefficient of 0.154970, while the variable that has the least influence is Activity in testing Firm's Value in manufacturing industries in the IDX in the reporting during the Covid-19 pandemic. Findings in proving the sixth hypothesis is support the prior study stated that the net working capital firm's has a positive and relevant significant on performance using internal measurements [36], and then liquidity with current ratio prove the relevance value about ROA and ROE to measure firm's performance [37].

The financial ratio's use the inventory turnover analysis to measure of activity in this study prove the seventh hypothesis proposed, which probe is support the prior study by [37, 23] stated that adjustment inventory and *average age of inventory* have positive relevance to the Tobin's Q for measurement firm's value. But research findings from [37] inferred that the asset turnover in the UK insurance companies have a negative relevance on the financial performance. The financial ratio's use the debt ratio to measure of solvability in this study prove the eight hypothesis proposed, which probe is support the prior study that the debt ratio is an important and positive contribute to the Tobin's Q [39], and use the debt-to equity ratio in [28] studies.

research. But, insignificant when solvability used to verify the earnings quality with debt-to-total assets proxy research [38].

The intellectual capital with VACA components in this study prove the ninth hypothesis proposed, which probe is support the prior study by [42] stated that the VACA component as intellectual capital is no relevance to verify firm's value. However, not support with findings by [41] stated the intellectual capital disclosure (ICD) as consolidated reports results in firm's performance, uses ROE dimension. The audit quality use the LNFE proxy in this study prove the tenth hypothesis proposed, which probe is support the prior study by [38] is stated that the LNFE has a positive impact toward firm's value Tobin's Q, and use the return on assets (ROA) with sustainable growth rate (SGR) component in [43] studies. research findings. However, not support with findings by [44] with uses the categorization of Big 4 has no significant positive impact on firm value.

The earnings quality use the accrual receivables in this study prove the eleventh hypothesis proposed, which probe is support the prior study by [46] is stated that relevance and positive influenced earnings quality uses aspects of earnings persistence and management the timeliness of profitability. However, not support with findings by [45] studies, which is no significant positive impact of earnings quality toward stock returns.

CONCLUSIONS

This research purposes to analyze, test, observe and obtain empirical evidence on the relevance of Earnings Quality and Firm's Value which Financial Ratio's (consists of the Liquidity, Activity, Solvability), Intellectual Capital and Audit Quality in the manufacturing industry registered at Indonesian Stock Exchange (IDX) during the Covid-19 Pandemic. The final sample utilize of 360 observation data are used processing with panel data regression analysis to the verify of alternative hypotheses as follows:

- There is relevance Financial Ratio's of Liquidity, Activity, Solvability to the Earnings Quality.
- There is relevance Intellectual Capital and Audit Quality to the Earnings Quality.
- There is relevance Financial Ratio's of Activity and Solvability to the Earnings Quality, but Liquidity is not relevance.
- There is relevance Earnings Quality to the Firm's Value
- There is no relevance of Intellectual Capital and Audit Quality to the Firm's Value.

This research provides an opportunity for the management as a agent of manufacturing industrial firms in registered at IDX to consider selecting policies, methods or accounting approaches that can improve earnings quality by considering measuring financial ratio's such as Liquidity, Activity and Solvency variables, intellectual model and audit quality with management detection techniques, earnings quality with the conditional revenue model approached. In addition, measuring firm's value using Tobin's Q proxies can also be used as a

bottom-line to detect the impact that originates from the relevance of the factors in order to maximize shareholder wealth through Activity, Solvency and Earnings Quality, although so far the companies studied still show indications of earnings management practices. Hereinafter, Tobin's Q proxy can be a reference for investor to identified the quality of earnings reported by company managers using certain techniques, whether share prices come from good earnings quality or not.

This study approach can adding comparisons to the periods before, during and after the Covid-19 pandemic with the development of independent sample t-tests and paired sample t-tests. Measuring Earnings Quality in future research agendas could use other alternative measurement techniques, such as error estimation in the accrual process, conservatism, accrual persistence, and profit distribution approaches. Furthermore, the entire component of the Value-Added Intellectual Capital Coefficient (IB-VAIC™) which consists of structural capital (SC), human capital (BC), and Customer Capital (CC) is used to detect the organization's intellectual capabilities and overall business assessment indicators. Other factors that can be used to see the relevance of Fim's Value and Earnings Quality are dividend policy, firm profitability, investment opportunity set (IOS), GCGI, and corporate social responsibility (CSR).

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